

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
19 May 2005 (19.05.2005)

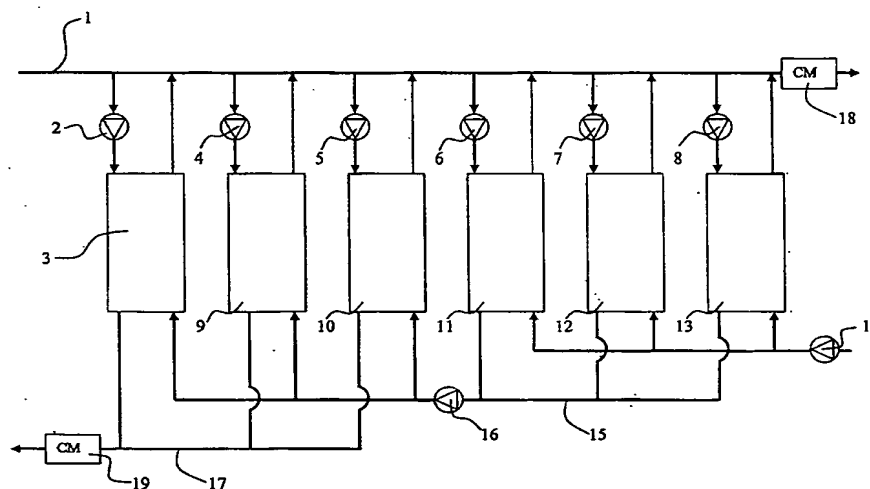
PCT

(10) International Publication Number
WO 2005/044427 A1

- (51) International Patent Classification⁷: **B01D 61/44**, 61/46, 61/48, 61/54
- (21) International Application Number:
PCT/US2004/035705
- (22) International Filing Date: 27 October 2004 (27.10.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/514,632 27 October 2003 (27.10.2003) US
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report

[Continued on next page]

(54) Title: IMPROVED ELECTRODIALYSIS SYSTEM AND PROCESS



(57) Abstract: A treatment system and method for continuous deionization of a biologically derived feed stream includes a plurality of electrodialysis units (3, 9, 10, 11, 12, 13) arranged in stages along a treatment line, and stages are controlled such that the feed stream attains a certain quality before entering the next stage. The feed and concentrate streams move in generally opposite sense along the line, matching fluid characteristics of dilute and concentrate cells. The treatment line has two or more stages. Systems may have phased staging operations, and cell constructions may adapt the electrodialysis units for enhanced processing of difficult process fluids. A controller sets operating potentials in different electrical stages, and simple control parameters optimize ion removal and current efficiency without polarization of the fluid. The invention also includes phased staging of reversal operation, and cell constructions or fillings that adapt the treatment cells for enhanced processing.

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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